

# RECLAMATION

*Managing Water in the West*

## FINDING OF NO SIGNIFICANT IMPACT

### Colusa County Water District SCADA Installation Project

FONSI 14-08-NCAO

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# Background

Reclamation proposes to provide a Department of the Interior WaterSMART Water and Energy Efficiency grant to the Colusa County Water District (District). The District would use this grant funding as a cost-share to install Supervisory Control and Data Acquisition (SCADA) equipment and upgrade two voltage control centers to automate District-wide water operations. Automation of water operations would improve on water use efficiencies within the District to result in substantial energy and water savings. The proposed Project is located in Colusa and Yolo counties, California.

The U.S. Department of the Interior's WaterSMART (Sustain and Manage America's Resources for Tomorrow) Program establishes a framework to provide Federal leadership and assistance on the efficient use of water, integrating water and energy policies to support the sustainable use of all natural resources, and coordinating the water conservation activities of various Department bureaus and offices. Through the WaterSMART Program, the Department is working to achieve a sustainable water management strategy to meet the Nation's water needs. For further information on the WaterSMART Program, please see (<http://www.usbr.gov/WaterSMART>).

In accordance with the National Environmental Policy Act (NEPA), the Bureau of Reclamation (Reclamation) has prepared an Environmental Assessment (EA) for the *Natomas Central Mutual Water Company's Sankey Road Check Structure Automation Project*, dated September, 2014.

## Alternatives Including the Proposed Action

### No Action Alternative

The No Action Alternative would consist of Reclamation not providing grant funding for the Project, which would likely result in the District continuing to operate and maintain their distribution system under the existing condition.

### Proposed Action

The Proposed Action is to provide a WaterSMART Water and Energy Efficiency grant (\$483,000) to the District. The grant funding would be used as a cost-share to install SCADA equipment and upgrade two voltage control centers to automate District-wide water operations. The equipment breakdown for each area where SCADA would be installed follows. In all cases, this equipment is to be installed on existing infrastructure.

### Pumping Plants on the TCC

There are five canal side sites (6BP, 5BP, 3BP, 2BP, 7A) that receive water from the TCC. These pumping plants elevate the water to the first reservoir then the re-lift pumping plants provide additional lift to the following reservoirs. Pump sizes and count vary from one canal site plant to the other but the basic control and equipment remains the same for all 5 sites. The

following is a list of the new equipment that will be installed in these plants as part of the SCADA system. General information on each pumping plant and timing of installation are provided in Appendix A.

- New state-of-the-art Programmable Logic Controller (PLC) Transmission Control Protocol/Internet Protocol (TCP/IP) with appropriate inputs and outputs for the pumping plant (PP).
- PLC Uninterruptable Power Supply (UPS).
- PLC and support equipment will be housed in the existing Motor Control Centers (MCC).
- Existing control wiring system and operators will be used for each individual pump, except 2B and 2C, which will have new MCCs installed (see Medium Voltage Motor Control Center Upgrades below).
- Networked radios for communication between the lateral pumping plants for levels, run status, etc.
- Data communication link to the office for the office SCADA Human Machine Interface (HMI) computer.
- Pump control programming to maximize efficiency through pump selection.
- New sump level sensor.
- New downstream reservoir level sensor.
- Modbus Interface Module (MIM Optional) to interface with the on-site SonTek flow meter, if applicable.

### **Medium Voltage Motor Control Center Upgrades**

The existing medium voltage MCCs at pumping plant 2B and 2C would be upgraded to allow for compatibility with the new SCADA system. This upgrade consists of replacing the complete medium voltage motor starter, sync and operator control components on the fourteen (14) pumps at each of the pumping plants. The new motor starters will be soft-starts that will prolong the life of the motor, pumps, and hydraulic system components while reducing energy use (~25% reduction). The existing enclosure and internal bussing will be reused. The other pumping plants (regular voltage plants @ 240 volts) in the District would not be retrofitted with soft-starts but would have, as a result of the SCADA implementation, new pump selection algorithms implemented for selecting the most efficient pump combination for the desired flow rate

### **Pumping Plant Relift Sites**

There are 10 relift sites and/or regulating tanks/reservoirs that receive water from the lower plants and via the relift plant elevate the water to the next reservoir. Pump sizes and count vary from one relift site to the other but the basic control and equipment remains the same for all 10 sites. The following is a list of the new equipment that will be installed in these plants as part of the SCADA system. General information on each location is provided in Appendix A.

- New state-of-the-art PLC TCP/IP with appropriate inputs and outputs for each pumping plant (PP).

- PLC UPS.
- PLC and support equipment will be housed in the existing MCCs.
- Existing control wiring system and operators will be used for each individual pump except for 2C, which will be equipped with new MCCs.
- Networked radio for communication between the lateral pumping plants for levels, run status, etc.
- Pump control programming to maximize efficiency through pump selection.
- New sump level sensor.
- New downstream reservoir level sensor.

### **Gravity Sites**

There are three gravity sites that receive water from the TCC (4G, 2G, and Turnout 8; see Figure 1.1 for general locations). These sites provide water to downhill laterals. There are no pumps at these sites but the basic control and equipment remains the same for both sites. The following is a list of the new equipment that will be installed in 2BG and Turnout 8 as part of the SCADA system. Note: site 4G is not part of the Proposed Action. Additional information on each site is provided in Appendix A.

- New state-of-the-art PLC TCP/IP with appropriate inputs and outputs for each gravity site.
- New enclosure stand and antenna for PLC.
- Networked radio for communication to office for levels, etc.
- Pump control programming to maximize efficiency through pump selection.
- New upstream screen level sensor.
- New downstream screen level sensor.
- Modbus Interface Module (MIM Optional) to interface with the on-site SonTek flow meter, if applicable.

### **Office Master Site**

The master site will acquire data from all SCADA sites via the radio network system. This data will be graphically presented by site on the office computer and HMI software. The graphical screens will be constructed with operational use in mind as follows:

- Introductory screen to acknowledge district and allow direct access to sites and setup.
- Overview screen with basic system operational data displayed on a map of the district.
- Individual site screens to remotely view field data and control pump stations.
- Setup screens for:
  - Sensor field calibration
  - Pump selection and operational level set points
  - Operational delay timer

- Alarm set points
- Alarm delays
- Alarm output control
- Preventative maintenance screens for run times and starts.
- Alarm and dialer or email.
- Alarm screen.
- Remote access via internet for remote viewing and control.
- Wall mounted wide screen monitor for easy group viewing.
- Touch screen monitor for HMI computer for easy operator access.
- Master radio and omni-directional antenna for communication to data sites.
- 1500VA UPS backup for radio and HMI computer.
- Secure operator HMI login.
- One additional remote HMI computer will be provided in the manager's office.

### **Installation Timelines**

The installation process is anticipated to take up to a year to complete due to the need to have equipment manufactured for this project as well as the continual need to use the pump systems during the irrigation season. With these considerations, the retrofit at the 2B and 2C pumping plants would occur between January and March of 2015, a time before the irrigation season begins. Once completed, the master computer, radio and programs would be installed at all pumping stations, likely in March or April. SCADA equipment would be installed after October 1, 2015, again a time when water demand is limited, which allows field testing and troubleshooting of the system during a time of low demand.

## **Findings**

In accordance with Section 102(2)(c) of the National Environmental Policy Act of 1969, as amended, Reclamation's Northern California Area Office has determined that an environmental impact statement is not required for further review of these modifications. This Finding of No Significant Impact (FONSI) is supported by Reclamation's Environmental Assessment (EA) Number EA-14-08-NCAO, *Colusa County Water District SCADA Installation Project*, which is incorporated by reference and attached. This FONSI is based on the following:

### **Surface Water Resources**

Under the Proposed Action, cost share funding would be provided to the District the ability to remotely monitor pressures and water elevations throughout the District to more efficiently use the existing available water resources and infrastructure. The new SCADA system and controls would prevent these duplicate irrigations, which are estimated at 2,160 acre-feet annually. In turn, this water would be available for other uses.

The timeline for implementing the Proposed Action is not expected to result in any adverse effect to water conveyance within the District. System testing and troubleshooting would occur during the time of reduced water demand.

### **Biological Resources**

The Proposed Action does not have the potential to affect Biological Resources. All infrastructural changes associated with the Proposed Action would occur at existing facilities and no ground disturbance would occur. Additionally, there would be minor changes to water efficiency, but this is not expected to change land use practices and therefore potential habitat of any flora or fauna in the region.

### **Land Use.**

There would be no change to land use.

### **Cultural Resources**

The Proposed Action will have no adverse effect to historic properties.

### **Indian Sacred Sites**

There are no identified Indian Sacred Sites within the action area of the Proposed Action and therefore, this project would not inhibit use or access to Indian sacred sites.

### **Indian Trust Assets**

The Proposed Action does not have the potential to impact Indian Trust Assets.

### **Environmental Justice**

Implementing the Proposed Action will not disproportionately affect minorities or low –income populations and communities since there will be no change in land use.

### **Cumulative Impacts**

There are no other known past, present, and reasonably foreseeable future actions that would cumulatively result in significant impacts to the human environment when taking into consideration the actions analyzed within this EA.